Dam Break Study Submittal Checklist

Dam Name: _____
ODNR File #: _____
Date: _____
Engineer Submitting Study: _____
Purpose of Study: _____

General Requirements

Yes	
☐	Contact the Division prior to initiating the study
☐	Dam file reviewed at dam safety office. New hydrologic and hydraulic analyses reconciled with previously approved analysis (if applicable)
☐	Report title page includes dam name, ODNR file #, and current classification
☐	Study performed and submitted by Professional Engineer
☐	Written narrative describes purpose of the study, summary of results, and provides narrative and data to support model development.
☐	Native files supporting dam break study provided in digital format (i.e. excel, HECRAS, HECHMS, etc.)

Scenarios Modeled and Discussed Appropriately

☐ Emergency Action Plan (on-stream dam)

Yes	
☐	Scenarios discussed in report
☐	Sunny day failure
☐	100-yr flood with failure
☐	Design storm with failure

☐ Hazard Classification Study

Yes	
☐	Sunny day failure
☐	Design storm with failure / no failure
☐	Other failure / no failure scenarios as required

☐ Emergency Action Plan (upground reservoir)

Yes	
☐	Scenarios discussed in report
☐	Normal pool failure
☐	Other failure scenarios as appropriate
☐	Failure simulated on all embankments

☐ Critical Flood Study

Yes	
☐	Submittal in accordance with OAC 1501:21-13-02(B-E)
☐	Design storm with failure / no failure
☐	Other failure / no failure scenarios as required

Model Inputs Discussed and Justified in Report

☐ 1D Unsteady Model (Not a comprehensive list)

Yes	N/A	
☐		Survey datum used throughout the models
☐		Modeling software used (including version)
☐	☐	Terrain file source
☐		Cross section geometry data source
☐		Manning's roughness
☐	☐	Downstream structures including bridges and culverts
☐		Lateral inflows and base flow
☐		Computation time step and cross section spacing
☐	☐	Ineffective flow areas
☐		Boundary conditions
☐		Dam failure timed with flood peak
☐		The termination point with supporting data / info
☐		Confirm breach volume from results (for each scenario)
☐		Identified equation set used in analysis

☐ 2D Unstedy Model (Not a comprehensive list)

Yes	N/A	
☐		Survey datum used throughout the models
☐		Modeling software used (including version)
☐		Terrain file source
☐		2-D computation area grid size
☐	☐	Breaklines and / or refined regions
☐		Manning's roughness shapefile
☐	☐	Downstream structures including bridges and culverts
☐		Lateral inflows and base flow
☐		Computation time step satisfies courant condition
☐		Boundary conditions
☐		Dam failure timed with flood peak
☐		The termination point with supporting data / info
☐		Confirm breach volume from results (for each scenario)
☐		Shallow water equations used

Dam Break Study Submittal Checklist

Dam Break Parameter Estimation Discussed and Justified in Report

Yes		Yes	
☐	Reference used to estimate dam breach parameters	☐	Breach width
☐	Selection of unique, scenario specific parameters	☐	Breach side slopes
☐	Breach location(s) discussed and justified	☐	Breach invert elevation
☐	Consideration of variable sensitivity	☐	Breach formation time
☐	Failure mode (piping or overtopping)		

Modeling Results Discussed in Report

☐ **Hazard Classification Study (Not a comprehensive list)**

Yes	
☐	Max flood depth at possible hazard (each scenario)
☐	Max velocity at possible hazard (each scenario)
☐	Incremental flood depth at possible hazard (each scenario)
☐	Pertinent information at each possible hazard
☐	Proposed classification per OAC 1501:21-13-01

☐ **Critical Flood Study (Not a comprehensive list)**

Yes	
☐	Max flood depth at possible hazard (each scenario)
☐	Max velocity at possible hazard (each scenario)
☐	Incremental flood depth at possible hazard (each scenario)
☐	Pertinent information at each possible hazard
☐	Proposed critical flood per OAC 1501:21-13-02(C)

Inundation Mapping Requirements

Yes		Yes	
☐	Electronic (PDF) copy of maps submitted	☐	Scenarios mapped with unique color shading
☐	Shapefiles of inundation areas submitted	☐	Depth and arrival time at possible hazards
☐	Tiled overview map showing orientation of detailed maps	☐	Depth and arrival time at roadway overtopping locations
☐	Map printed to scale with scale bar and north arrow	☐	Scenario described (ie. Dry, 100-year flood, PMF, etc.)
☐	Printed on most recent or best color aerial photography	☐	Statements defining arrival time, abbreviations and units
☐	Roads labeled	☐	Statement to justify termination point

Notes: